

## **REMARKS**

In the Office Action dated March 6, 2006, the Examiner rejected claims 1-7, 9, and 17-23 under 35 U.S.C. §103(a) as being unpatentable over *Knowles et al.* (U.S. Pat. No. 6,182,897) in view of *Boris et al.* (EP 0801355). Applicants have amended claims 1, 2, 17, and 21. Applicants have also added new claim 28. For the reasons given below, Applicants respectfully submit that the references taken alone or in combination do not disclose, teach, or even suggest the presently claimed invention.

### **Telephone Interview**

A telephonic interview was conducted on July 25, 2006. Participants of the interview included Examiner Bahta, Applicants George Olaru and Ryan Smith, and Applicant's representatives Sean Sullivan and Jori Schiffman. No exhibits were shown nor demonstrations conducted. The participants discussed independent claims 1 and 17, as well as the *Knowles* reference. Further, Applicants provided the Examiner with background information regarding implementation of the invention. Applicant's representatives explained to the Examiner why the instant invention is distinguishable from *Knowles* (see below). As a result of the interview, no agreement with respect to the claims was reached.

### **Response to the Claim Rejections**

The present application discloses a quick and efficient method for manufacturing hot runner systems, and in particular, the manifold plates used in such systems. Such an

expedient manufacturing method has never been done before in the hot runner industry. On the contrary, due to the customization and complex engineering associated with hot runner systems, it has traditionally taken 6-8 weeks at least, and frequently even longer, to engineer, manufacture, and assemble hot runner systems. Indeed, the traditional method for engineering, manufacturing, and assembling hot runner systems is to wait for a customer to place an order, and then completely engineer, manufacture, and assemble the customer's specified hot runner system from scratch. The engineering, designing, tooling, machining, and assembling involved in such a process takes several weeks, if not months, to complete.

For obvious reasons, there has been a great demand in the hot runner industry for dramatically reducing the time it takes to engineer, manufacture, and assemble hot runner systems based on customers' specific design criteria. The present invention has satisfied this customer demand by engineering, manufacturing, and assembling hot runner systems in a much shorter period of time – only a few days – than traditional methods, while still allowing customers flexibility in choosing their design parameters. This more efficient and expedient method is achieved by pre-manufacturing certain components, such as manifold plates and plugs, necessary for the hot-runner systems before they are ordered, thereby saving weeks of design and manufacturing. No other hot runner assembly system can produce manifolds in an efficient manner like the present application. These improvements account for the shorter assembly time of the present hot runner system.

The system of the present application is also very counterintuitive. More specifically, partially manufacturing manifold plates can lead to a waste of material

and/or labor. For instance, a manifold plate might be unnecessarily large for a given application (*i.e.*, the nozzle pitch is small but the partially manufactured manifold plate is large), which wastes material. Further, grinding a manifold plate down to a customer-specified thickness might have to be performed, which wastes material and labor. In the present application, however, the waste is traded for increased speed of manufacture and assembly. Thus, the system of the present application is non-obvious.

The Examiner submits that the combination of *Knowles* and *Boris* discloses the computer implemented system and automated method of the present application. Applicants respectfully disagree. *Knowles* teaches a web-enabled system and method for designing and manufacturing laser scanners by assembling a plurality of fully manufactured components. Unlike the present application, *Knowles* does not disclose the laser scanner being created by assembling a plurality of components that include at least a manifold plate which was ***partially manufactured*** and placed in inventory before the configuring subsystem received any customer defined parameters for the customized injection molding system. In fact, none of the components used in *Knowles* assembly process are disclosed as having been only partially manufactured and placed in inventory prior to receiving an order for a laser scanner.

In contrast, the manufacture of hot runner systems requires customizability beyond what *Knowles* teaches for the modular manufacture of laser scanners. This increase in customizability is due in large part to the fact that customers demand the flexibility of a vast number of dimensional possibilities for their hot runner systems.

Nozzle location and pitch and manifold thickness are examples of dimensions that may

have many possible values, within certain ranges, and therefore require additional customization of manifold plates used in customer-defined hot runner systems.

In laser scanners, on the other hand, only modularity is important, as exemplified by *Knowles'* teaching of the assembly of modular laser scanner components (*Knowles* col. 6, line 40). According to *Knowles*, some of these components may be fully prefabricated, while others may not be manufactured until after receiving a customer's order and completing the final product design. But, *Knowles* does not teach that any of these components are only partially manufactured and placed in inventory prior to receiving a customer's order. Attempting to achieve this kind of modular manufacture in hot runners by fully prefabricating all possible manifolds is not practical, especially in light of the countless combinations of possible component dimensions, and the alternative of waiting until an order has been received and the product design has been completed to start and finish the manufacture of a manifold wastes valuable time.

As an optimal solution to these problems associated with *Knowles*, the present invention provides *partially manufactured* manifold plates, which are placed in inventory and not fully manufactured until a customer provides specific parameters, in order to speed up the manufacture and assembly of hot runner systems as much as practicable while still retaining customizability. Thus, while both the present application and the system of *Knowles* may disclose the assembly of modular systems, only the present application requires the additional steps of first *partially manufacturing* one of more of the modular components before receiving any customer orders, and then second, fully manufacturing the partially manufactured component after receiving a customer

order and before assembling the final system.

The Examiner admits that *Knowles* fails to disclose a custom design injection molding machine and looks to *Boris* to remedy that deficiency. *Boris* teaches a method and apparatus for the automated generation of designs, specifications, pricing, manufacture, installation, and re-engineering of centrifuges, Young filters, and other similar machines. The Examiner interprets "other similar machines" to mean "any other machines" (Office Action, p. 2). However, this interpretation is incorrect because only machines that are similar to centrifuges or Young filters are disclosed by *Boris*. Hot runner systems are not similar to centrifuges or Young filters, and thus are not disclosed by *Boris*. Applicants submit that *Boris* fails to remedy the deficiency of *Knowles*, and therefore the present invention is not obvious in view of *Knowles* and *Boris*.

Moreover, Applicants submit that *Knowles* and *Boris* are non-analogous references. To rely on a reference under 35 U.S.C. §103, it must be an analogous reference. A reference is analogous if (i) the reference is in the field of Applicant's endeavor or, if not, (ii) the reference is reasonably pertinent to the particular problem with which the inventor was concerned. (MPEP § 2141.01(a)). Neither *Knowles* nor *Boris* are in the field of applicant's endeavor, that is, reducing the time it takes to engineer, manufacture, and assemble hot runner systems.

Moreover, *Knowles* and *Boris* are not reasonably pertinent to the particular problem with which the inventors of the present application were concerned. A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically

would have commended itself to an inventor's attention in considering his problem. (MPEP § 2141.01(a)). Presently, the inventors were interested in reducing the time it takes to engineer, manufacture, and assemble hot runner systems. (See Specification, p. 6, l. 20-22 and p. 7, l. 1-8). A person having ordinary skill in the injection molding art would not reasonably have expected to solve the problem of reducing the time it takes to engineer, manufacture, and assemble hot runner systems by considering references dealing with laser scanners or centrifuges, due to the substantial differences of components and systems.

Even if, for sake of argument, *Knolwes* or *Boris* did disclose reducing the time it takes to engineer, manufacture, and assemble hot runner systems, to establish a prima facie case of obviousness under § 103 there must be some suggestion or motivation to combine or modify the cited references, and the cited references must teach or suggest all the claim limitations. (MPEP § 2142). Applicants contend that no motivation exists for combining *Knowles* and *Boris* to obviate the present claims. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. (MPEP § 2143). Thus, "[i]n determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification." (MPEP § 2143.01). Consequently, to make a successful §103(a) obviousness rejection, the Office must show some objective teaching in the prior art or explain how one of ordinary skill in

the art would be motivated to combine the relevant teachings. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

Applicants submit that there is no teaching or suggestion within *Knowles* or *Boris* to make the proposed combination. *Knowles* is directed toward a web-enabled system and method for designing and manufacturing laser scanners, and *Boris* is directed toward a method and apparatus for the automated generation of designs, specifications, pricing, manufacture, installation, and re-engineering of centrifuges, Young filters, and other similar machines. Neither reference includes a suggestion or motivation to combine with any teachings of the other reference.

Furthermore, the Examiner has not shown any objective teaching in *Knowles* or *Boris* to explain how one of ordinary skill in the art would be motivated to combine their teachings. The Examiner contended that “it would have been obvious to a person of ordinary skill in the art at the time invention was made to modify the teachings of *Knowles* with the teachings of *Boris* in order to meet different customer need.” (Office Action p. 2). Applicants respectfully disagree because *Knowles* deals with the designing and manufacturing of laser scanners and is not concerned with the designing and manufacturing of centrifuges, as disclosed in *Boris*. Furthermore, *Knowles* may teach an automated system for designing and manufacturing a product using customized specifications, but it does not teach a system that is created by assembling a plurality of components, the components including at least a manifold plate that was partially manufactured and placed in inventory before the configuring subsystem received any customer defined parameters for the customized injection molding system.

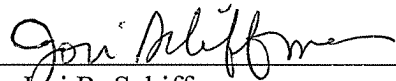
## Conclusion

In view of the foregoing, Applicants respectfully request that all of the rejections of claims 1-7, 9, and 17-23 be withdrawn. Applicants hereby earnestly solicit an early Notice of Allowance. If, for any reason, the Examiner is unable to allow the application on the basis of this amendment and feels that a telephone conference would help clear up any unresolved matters, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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